Anti-Personnel Anti-Electronic X-Ray Pulse Mechanism Driven by Explosive Blast Wave Energy Actuated Versus High-Thickness Casing Undergoing Rapid Cycling of Coulomb-Driven Liquefaction-Resolidification

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Introduction

In the 1950s, just as Americans began to hear about a novel weapon called a hydrogen bomb, rumors were started by the American government about a new kind of weapon related to atomic weapons capable of achieving some of the frightful effects associated with radiation poisoning which was said to be capable of eradicating personnel and destroying electronics. This rumored weapon was called a neutron bomb. While scientists, indeed, explored the feasibility of the creation of such a device, this exploration ended with the researchers' arrival at the conclusion that neutrons were not sufficiently abundant nor were they sufficiently energetic at ranges of more than a few feet to cause the desired effects. The neutron bomb, despite never existing, became a household name mentioned in many-a-speculative discussion about secret military capabilities at around that time.

The majority of the harmful effects associated with nuclear detonations stem from the emission of X-Rays rather than neutrons. It is the emission of X-Rays which are, furthermore, responsible for the electronics-damaging effects associated with an electromagnetic pulse.

Conventional wisdom holds that only a nuclear device is capable of producing such large quantities of X-Rays so as to cause radiation poisoning, but new advancements in condensed matter physics promulgated by this author (ibid.) may have disturbing alternative applications which will aid in the mission to bring the longstanding goal of producing a devastating and practical device capable of eliminating personnel and electronics from urban areas while leaving most infrastructure intact to within arm's reach.

While the United States has technically had, since the Vietnam Era, a weapon in its inventory sometimes called a "blackout bomb" which works by dispersing long strands of metallic tape (essentially the same as that found in cassette tape reels) like confetti in air bursts designed to create circuits between power lines in order to cause localized blackouts, these weapons have seen little practical use. Whenever a desire has existed to cause a blackout, substations or power generating stations are typically targeted; a far more efficient approach than targeting neighborhoods one at a time with "blackout bombs." In modern warfare, given that eliminating adversary electronics is also a desired goal, a single weapons system capable of causing blackouts, permanent destruction of electronic devices as well as anti-personnel effects is coveted.

Abstract

Any time a conventional munition featuring a metallic casing is detonated, it creates a faint X-Ray emission. As mentioned in a previous publication (ibid.,) these emissions can be detected from orbit much as X-Ray double-flashes associated with nuclear detonations have been since the earliest days of nuclear weapons testing. Prior to orbital detection, these detonations were detected using balloons equipped with X-Ray sensors with the most noteworthy of these balloons being the one lost at Roswell in 1947. Thanks to radio relays and regular sorties of these balloons, the United States became instantaneously aware the moment that the Soviet Union tested their first atomic weapon in 1949. As X-Ray detectors have improved in terms of sensitivity, it has recently become possible to both detect and characterize detonations associated with explosions as small as that associated with a hand grenade from orbital ranges. In many cases, the casing thickness and type of explosive used help to create a unique X-Ray signature which can inform an astute observer as to the country of origin of the manufacturer of an explosive, as mentioned in the previous publication. This is useful as if one nation is secretly shipping arms to another and an intelligence community failed to noticed it through other modes of detection, the country in receipt of those weapons would inevitably test them and, upon so doing, would expose their receipt of the weapons through the X-Ray emissions associated with test detonations of any quantity. For our purposes in this publication, what is important to understand is that the forceful separation of metal leads to the generation of X-Rays. Any time metal is forced to separate due to a conventional detonation, the cubic structures making up iron molecules near the faults in the separating casing are forced to rotate on their own axis as they pull apart. Although the molecules of iron at the boundaries remain connected to the intact shrapnel, the rotation of cubic, strongly-bound bodies against other cubic, strongly-bound bodies generate further X-Rays associated with conventional detonations. It is not merely the act of shearing the metal which generates these rays, but the behavior of the intact shrapnel at the molecular level during the process of the explosion. The whole pieces of shrapnel undergo molecular shifting during such an explosion which, in fact, generates the preponderance of the overall X-Ray emissions. To put it simply, forcibly changing the rotational relationships between strongly-bound cubic metals when in the solid phase by even a few degrees of angular orientation lead to the generation of X-Rays. Thus, it would be logical to attempt to create systems which provide for the continual agitation and re-agitation of the same body of metal at energies supportive of X-Ray generation whilst overcoming the tendency of the agitant force to be dampened through its interaction with the metal.

Equipped with this understanding, one can begin to formulate an approach to X-Ray generation using high-explosive processes geared toward maximizing burst intensity. The best such strategy, given the radical new plausibility of the room-temperature liquefaction of metals through a Coulomb-alternation mechanism, would be to encase a high explosive within an unusually thick casing. A Rapid-

Alternation CFL generation mechanism (crystalline) would form another layer around the outside of the casing.

As the device is detonated, the explosion would cause fragmentation of a thin layer of the casing but, if the casing is too thick, without any change to the physical behavior of the casing, the explosion may be blunted or entirely contained within the vessel. Comparatively few X-Rays would be generated. The addition of an outside force which causes the entire body of the casing to fluctuate between the liquid and solid phases of matter, however, would change this dynamic. With this added ingredient, a blast wave could shear a layer of solid metal and could penetrate further into the solid body of the casing with ease when it is in a liquid state. The casing may change between liquid and solid as may as 100,000 times per second. Each time the casing re-solidifies, the blast wave finds itself able to tear apart another thin layer, creating the fault lines characteristic of a casing in mid-explosion, time and again. In the absence of this transient liquidity, in a thick casing, the shrapnel from the inner layers would force escaping gasses to pass through the narrow faults created with these faults being in different positions for each layer. Before long, more gas is deflected than is able to pass through the cracks.

To employ a metaphor, presume that a person wishes to create a loud sound by breaking a window. They reason that they can create a louder sound by breaking two windows at once with the same hammer and the same thrust. They are pleased with the result from breaking two at once and then try three. Their sledgehammer passes with ease through three conventional glass panes. Eventually, they try to layer dozens of panes together with little or no gap between them and accidentally discover that little sound is generated in that scenario because sufficiently thick glass is shatter-resistant. Throw a sledgehammer through 10 thin panes with an air gap between them and all 10 will shatter. Eliminate the gap and even a sledgehammer can be stopped in its tracks by the combined strength of the glass. Much like shattering glass, using progressively thick layers of steel, at a certain point, leads to a blunted X-Ray signature in such an endeavor. Paradoxically, it is the creation of friction between large quantities of metal which one needs to bring about in order to create the "loud" sound that is a strong X-Ray emission.

If an overpressure wave within a casing is enabled to interact with solid material for short increments prior to some outside force (in our case, RACFL) rendering that solid as a liquid, faults could be created and the blown-apart metal could be liquefied, enabling the pressure wave to continue unabated without undergoing an inversion of momentum or "reflection." This would have the dual effect of annealing the faults in the metal and *causing the shrapnel to recombine mid-explosion*. It would also eliminate the need to use a casing made from a great many thin layers and would enhance the X-Ray generative effect well beyond the performance of a system based upon such a design. As the liquefied casing re-solidifies, it would naturally fluctuate in terms of the angular orientation of its molecules. It could be predicted that during this re-solidification period, the most intense bursts could be generated as the molecules would need to rapidly

"snap back in" to their natural cubic alignments, a process which is ordinarily quite gradual in cooling metals. When this process is accelerated as a result of the non-thermal method of liquefaction, cubic bodies would need to very rapidly snap back into the ordered state, producing dangerous levels of X-Ray emissions reminiscent of the 1945 and 1946 incidents in which the "Demon Core" produced unexpected radioactivity as a simple consequence of being dropped.

In this novel concept, the same metal bomb casing could be blown apart, in effect, and re-annealed many thousands of times before the overall casing expanded sufficiently to destroy the RACFL mechanism which makes the rapid phase shift cycle possible, thus ending the process of Phase Transition-Enhanced X-Ray Pulse Emission.

The pre-programmed phase transitions would need to be carefully calibrated, ideally growing progressively shorter in duration toward the end of an explosive process given that the temperature of the casing would increase dramatically, approaching but not quite reaching the melting point by the end of the process.

Conclusion

If such a process could be sufficiently optimized, a single conventional munition could produce sufficient X-Ray energy to destroy electronics and to cause radiation poisoning.